



## PATENT COOPERATION TREATY

PCT

17 MAR 2005

INTERNATIONAL PRELIMINARY EXAMINATION REPORT PCT  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PU0294-PCT		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 03/12947	International filing date (day/month/year) 19.11.2003	Priority date (day/month/year) 20.11.2002	
International Patent Classification (IPC) or both national classification and IPC H01J49/00			
Applicant AMERSHAM BIOSCIENCES AB et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand  19.05.2004		Date of completion of this report  16.03.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer  Lang, T  Telephone No. +49 89 2399-2594 	

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International application No. **PCT/EP 03/12947**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*):

**Description, Pages**

1-8 as originally filed

**Claims, Numbers**

1-6 as originally filed

**Drawings, Sheets**

1/3-3/3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
  - ☐ the language of publication of the international application (under Rule 48.3(b)).
  - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
  - ☐ filed together with the international application in computer readable form.
  - ☐ furnished subsequently to this Authority in written form.
  - ☐ furnished subsequently to this Authority in computer readable form.
  - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
  - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:
- ☐ the description, pages:
  - ☐ the claims, Nos.:
  - ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	2-6
	No: Claims	1
Inventive step (IS)	Yes: Claims	6
	No: Claims	1-5
Industrial applicability (IA)	Yes: Claims	1-6
	No: Claims	-

2. Citations and explanations

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1) Reference in made to the following documents:**

D1: US 5 464 985 A

D2: Lubman D M; Bell W E; Kronick M N; "LINEAR MASS REFLECTRON WITH A  
LASER PHOTOIONIZATION SOURCE FOR TIME-OF-FLIGHT MASS  
SPECTROMETRY"; Analytical Chemistry vol. 55 no. 8, pp. 1437-1440;  
XP002064382

D3: US 6 013 913 A

The documents D1 and D2 were not cited in the international search report.

**2) Novelty (Article 33(2) PCT)**

The subject-matter of **claim 1** is not new:

Each of **D1** (see figure 9b, column 9 lines 18-60, and claim 4) and **D2** (see figure 1 and page 1438, lefthand column, last paragraph) teach a reflectron with individually adjustable potentials on the reflectron electrodes; and thus anticipates the subject-matter of claim 1.

Besides, also D3 (column 6 lines 7-23) anticipates the subject-matter of claim 1, since there, the electric field inside the reflectron can be changed by switching electrode 9 either to HV supply 17 or to ground.

**3) Inventive Step (Article 33(3) PCT)**

**3.1)** Dependent claims 2-5 only comprise subject-matter relating to features which are either known, explicitly or implicitly, from the citations or considered to be routine matter to be expected of the skilled person. Therefore these claims cannot serve as a basis for a new independent claim which would meet the requirements of the PCT as to novelty

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and/or inventive step:

The feature of **claim 2** (two sets of resistances) is an obvious alternative to continuously adjustable potentiometers such as known from D1 (as cited), and cannot constitute an inventive step.

The features of claims 3 and 4 relate only to the use of the claimed apparatus; and are moreover known from either D3 (linear field) or D2 (any curved field is "essentially" quadratic).

The feature of claim 5 relates to a trivial consequence of the structure of a reflectron (if there are N electrodes, N-1 resistances are needed between these electrodes), and does not solve any particular technical problem.

**3.2)** The subject-matter of claim 6 appears to meet the requirements of Art. 33 PCT, since it provides a mechanically robust and simple alternative solution to the problem of adjusting the field inside the reflectron, which solution is neither taught nor rendered obvious in the prior art.

**Re Item VI**

**Certain documents cited**

**Certain published documents**

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
EP 1310982 A	14/05/2003	29/09/2002	09/11/2001

This document, which was not cited in the international search report and has a priority date before but is published after the priority date of the present application, discloses the subject-matter of at least claim 1 (see abstract, figure 3, and paragraphs [46-53]).